SECTION 5.0
FINDINGS AND CONCLUSIONS

This EA has been prepared to evaluate the potential effects on the natural and human environment from activities associated with implementation of the Army RCI at Fort Detrick. The EA has examined the Army's preferred alternative (implementation of the CDMP negotiated with GMH, the selected Development Entity) and the no action alternative.

The proposed action is privatization and expansion of family housing areas in the northwest portion of Fort Detrick, which entails construction of about 292 new housing units, demolition of about 127 existing units, and revitalization of about 62 existing units, and construction of associated access roads and ancillary facilities.

This EA has evaluated potential effects on land use, aesthetic and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances at Fort Detrick.

5.1 FINDINGS

The evaluation of the proposed action, identified as the Army's preferred alternative, indicates that the physical and socioeconomic environments at Fort Detrick and in the ROI would not be significantly affected. The predicted consequences on resource areas are briefly described below. Table 5-1 provides a summary and comparison of the consequences of the proposed action versus the no action alternative.

5.1.1 Consequences of the Proposed Action

5.1.1.1 Land Use

Long-term minor adverse and beneficial effects on land use would be expected as a result of the proposed action. Portions of open space buffer and recreational areas would be converted to residential housing, reducing those land use inventories. The proposed construction would also increase the amount of impervious surfaces. However, new housing construction would take place near existing housing areas or other non-intrusive land uses, resulting in compatible land uses both on- and off-post, and all pertinent erosion control and storm water management standards would be implemented as specified in the CDMP. The expansion of residential housing would include new units with smart growth design centered around expanded and improved community resources and work areas. Overall, implementation of the proposed action is consistent with the current land use planning of the installation.

No effects from the proposed action would be expected on off-post land use surrounding Fort Detrick. The new housing areas on-post would be a compatible land use to existing off-post neighborhoods.

5.1.1.2 Aesthetics and Visual Resources

Short- and long-term minor adverse and long-term beneficial effects would be expected. Short-term adverse effects would be expected during the construction and demolition phase, and viewsheds could be permanently altered by constructing houses in areas now having open vistas to wooded areas. However, long-term minor beneficial effects would be associated with implementation of GMH's plans, as they would improve the visual appearance and aesthetic appeal of the existing housing areas by constructing new and revitalized housing units and integrating the natural surroundings into the new community designs. The CDMP also takes off-post residential areas into consideration by incorporating a 100-foot setback from the installation

Table 5-1
Summary of Potential Environmental and Socioeconomic Consequences

	Environmental and Socioeconomic Consequences	
Resource	**Proposed Action**	**No Action Alternative**
Land Use	Long-term minor adverse and beneficial	No effects
Aesthetic and Visual Resources	Short- and long-term minor adverse Long-term beneficial	Long-term minor adverse
Air Quality	Short-term minor adverse Cumulative – short-term minor adverse	No effects
Noise	Short-term minor adverse Cumulative – short-term minor adverse	No effects
Geology and Soils		
≠# Geology and Topography	No effects	No effects
≠# Soils	Short- and long-term minor adverse	No effects
≠# Prime Farmland	Long-term minor adverse	No effects
Water Resources		
≠# Surface Water	Short- and long-term minor adverse Cumulative – long-term minor adverse	No effects
≠# Groundwater	Short- and long-term minor adverse	No effects
≠# Floodplains	No effects	No effects
Biological Resources		
≠# Flora, Fauna, and Threatened and Endangered Species	Long-term negligible to minor adverse Long-term beneficial	No effects
≠# Wetlands	No effects	No effects
Cultural Resources	Long-term minor adverse and beneficial	No effects
Socioeconomics		
≠# Economic Development and Demographics	Short-term beneficial	No effects
≠# Housing	Long-term beneficial	Long-term minor adverse
≠# Quality of Life	Short-term minor adverse Long-term beneficial	Long-term minor adverse
≠# Environmental Justice	No effects	No effects
≠# Protection of Children	Short-term minor adverse	No effects
Transportation		
≠# Roadways and Traffic	Short- and long-term minor adverse Long-term beneficial Cumulative—long-term minor adverse	No effects
Utilities		
≠# Potable Water Supply	Long-term minor adverse and beneficial	No effects
≠# Sanitary Wastewater	Long-term minor adverse and beneficial	No effects
≠# Storm water	Long-term minor adverse	No effects
≠# Energy	Long-term beneficial	No effects
≠# Communications	Long-term beneficial	No effects
≠# Solid Waste	Long-term minor adverse Cumulative—long-term minor adverse	No effects
Hazardous and Toxic Substances	No effects	No effects

boundary in which no development would occur. The setback includes 50 feet of open space from the installation boundary and a 50-foot wide vegetation buffer that would separate the open space from an on-post perimeter road to be constructed for access to the housing areas. The vegetated buffer would provide visual, light, and noise attenuation between the on-post housing areas and off-post residential neighborhoods during the construction and operation phases of RCI, as planting would begin prior to construction activities. Therefore, adverse effects on off-post residential areas would be expected to be limited to the short-term construction activities.

5.1.1.3 Air Quality

Short-term minor adverse effects would be associated with demolition, renovation, and construction activities and their accompanying generation of fugitive dust and vehicle air emissions. Levels of air degradation would be very minor and of short, intermittent duration. The criteria pollutants generated from this proposed action conform to EPA criteria because they are de minimis with respect to the levels allowed in a severe nonattainment area. Since these values are de minimis, and the emissions are less than 10 percent of the regional values for each pollutant, the proposed action meets the requirements of the general conformity determination rule.

Following RCI construction, the increase of 163 on-post housing units would be expected to result in a decrease in mobile emissions generated from vehicles of on-post residents, as 163 additional military personnel would commute to work from on-post rather than from off-post. Personnel would be expected to drive a shorter distance to and from on-post facilities than when they resided off-post.

5.1.1.4 Noise

Short-term minor adverse effects would be associated with noise created by demolition, renovation, and construction activities. The nearest occupied on-post residential dwelling would be a minimum of about 150 feet from a construction site where the estimated noise levels would continually be greater than 65 decibels (dB). Off-post residential dwellings would be an estimated minimum of 250 feet from the nearest construction site. Construction activities would be limited to daylight hours during the normal workweek to reduce noise stress on and annoyance to nearby residents.

The CDMP also takes off-post residential areas into consideration by incorporating a 100-foot setback from the installation boundary in which no development would occur. The setback includes 50 feet of open space from the installation boundary and a 50-foot wide vegetation buffer that would separate the open space from an on-post perimeter road to be constructed for access to the housing areas. The vegetated buffer would provide noise attenuation between the on-post housing areas and off-post residential neighborhoods during the construction and operation phases of RCI, as planting would begin prior to construction activities. Therefore, adverse effects from noise on off-post residential areas would be expected to be limited to the short-term construction activities.

5.1.1.5 Geology and Soils

Geologic and Topographic Conditions. No effects would be expected. Construction should not take place near known sinkholes unless unavoidable and until remedial action has occurred or is taken.

Soils. Short- and long-term minor adverse effects would be expected. In the short term, an increased potential for erosion and sedimentation could be expected as a result of grading, removal of soils, and excavation activities. Long-term minor adverse effects on soils would be expected from an increase in impervious surfaces, which could potentially increase erosion.

However, the potential effects on soils would be limited to those areas where renovation of existing houses and construction of new houses are expected. Adverse effects would also be minimized through implementation of best management practices (BMPs) and expansion of the existing storm water management system. GMH is planning to construct two additional storm water management ponds as part of the RCI program.

Prime Farmland. Long-term negligible to minor adverse effects would be expected. Agricultural fields in the northern half of the RCI footprint would be converted to residential housing areas. The approximately 61 acres of prime farmland soil that would be affected represent less than 0.1 percent of the approximately 110,000 acres of prime farmland soil in Frederick County. Therefore, the proposed action would not contribute to significant conversion of farmland.

5.1.1.6 Water Resources

Surface Water. Short- and long-term minor adverse effects would be expected. In the short term, construction activities may increase erosion as well as dissolved solid, sediment, and petroleum hydrocarbon content in runoff entering Carroll Creek or the Monocacy River. Long-term effects on surface waters would be expected owing to the increase in impervious surfaces associated with new housing development. GMH is planning to construct two storm water management ponds for storm water quality recharge to maintain preconstruction infiltration rates and storm water quantity detention designed to handle the 1-, 2-, 10-, and 100-year storm events to protect channel erosion and overbank flood protection. GMH would also be required to obtain all appropriate permits and implement required storm water management and sedimentation and erosion control measures to ensure that implementation of the RCI project would have minimal effect to water resources.

Groundwater. Short- and long-term minor adverse effects would be expected for groundwater resources. Karst topography is extremely susceptible to groundwater contamination. Increased waterborne pollutants (e.g., dissolved solids, sediments, petroleum hydrocarbons) in surface waterbodies resulting from construction and demolition activities, as well as from the increased impervious surfaces following construction, could easily be transported into the groundwater system. The potential effects would be minimized by following the protocols outlined in state sediment and erosion control guidelines and the installation's Integrated Contingency Plan.

Floodplains. No effects would be expected.

5.1.1.7 Biological Resources

Flora, Fauna, and Threatened & Endangered Species. Long-term negligible to minor adverse and long-term beneficial effects would be expected on vegetation and wildlife. Landscaping vegetation in existing housing areas could be damaged or destroyed during the renovation phases of the RCI project. This would be offset by planting new landscaping using native species once new housing construction has been completed. Unimproved acreage available to wildlife would be reduced from approximately 300 acres to 240 acres. No effects would be expected on sensitive species because none have been identified in the vicinity of the RCI footprint. Long-term beneficial effects would be expected from afforestation, as no forests would be cleared by implementing the proposed action, but afforestation covering about 9 acres would occur.

GMH plans to plant a 50-foot wide tree buffer parallel to and at least 50 feet from the installation boundary north of the Old Farm Truck Gate, which would be pursuant to State of Maryland afforestation requirements. The buffer would be planted with trees native to central Maryland along the northern boundary adjacent to the Clover Hill residential community. An adequate number of 7- to 8-foot trees would be planted 10 feet on center and staggered in two rows as randomly as possible to retain a natural appearance, subject to a detailed landscaping plan

currently being developed by GMH. Planting would begin prior to construction activities. In addition to this buffer which would partially count toward the afforestation requirements, the trees would create a sufficient barrier to minimize the potential light, visual, and noise disturbances that may result from construction and operation of RCI housing. No forests would be expected to be cleared if the proposed action is implemented.

Wetlands. No effects would be expected.

5.1.1.8 Cultural Resources

Long-term minor adverse and beneficial effects on cultural resources would be expected from implementation of the proposed action. The two recorded historic period archaeological sites would be avoided during construction. However, new construction may cause soil disturbance that has the potential to uncover unknown archaeological resources. The Stonewall Jackson Beall house (Building 1401) would be maintained so that its historic value is preserved. A covenant would be included in the lease agreement between Fort Detrick and GMH to ensure preservation of the historic structures and archaeological sites. Fort Detrick and GMH should review and consider the Capehart and Wherry Neighborhood Design Guidelines when planning renovations that affect the Capehart-era housing, associated structures, and landscape features on Fort Detrick.

5.1.1.9 Socioeconomics

Economic Development. Short-term minor beneficial effects would be expected. Expenditures and employment associated with construction of family housing on Fort Detrick would increase sales volume, employment, and income in the region of influence (ROI), which for the social and economic environment analyzed in this study is defined as Frederick County, Maryland. The economic benefits would be temporary, lasting only for the duration of construction. These changes in sales volume, employment, and income would fall within historical fluctuations and be considered minor.

Housing. Long-term minor beneficial effects would be associated with the increase in inventory of family housing units in the ROI.

Quality of Life. Long-term beneficial effects would occur through the improvement of on-post family housing.

Schools. Long-term minor beneficial and short-term adverse effects would be expected. All school-aged children of Fort Detrick soldiers moving from off-post to on-post would continue to attend Frederick County Public Schools (FCPS), but their status would change from Military B students to Military A students. Therefore, it would be expected that FCPS would receive a higher level of funding for these students. In the short-term, children would attend overcrowded elementary and middle schools. However, FCPS is in the process of building eight new schools to help alleviate overcrowding and accommodate the growing student population.

Law enforcement and fire protection. No effects on law enforcement and fire protection would be expected.

Other Quality of Life Issues. No effects on medical services, health and safety services, family support services, shops and services, recreation, or homeless and other special programs would be expected to result from implementation of the proposed action. The population of the ROI would not change. These service facilities would continue to supply the same number of civilian and military personnel, whether they live on- or off-post. Fort Detrick also has a comprehensive plan for increasing and improving services on the installation, including constructing a new post exchange (PX) and commissary. These new facilities should be complete before the RCI initial

development period is complete, and would compensate for the increase in demand for on-post shops and services.

Environmental Justice. No effects would be expected.

Protection of Children. Short-term minor adverse effects would be associated with the increased safety risk of children playing in a construction site.

5.1.1.10 Transportation

Short- and long-term minor adverse and long-term beneficial effects on transportation would be expected. During the construction and renovation phase, traffic congestion could occur, particularly during rush hours as construction vehicles enter and exit Fort Detrick via the Old Farm Truck Gate or transport construction/demolition debris from the project site to a landfill. Although all RCI construction vehicles would be routed through the Old Farm Truck Gate, wear and tear on installation roads from construction vehicles would increase, which may in turn increase maintenance activities to prevent road failure. Long-term minor adverse effects would be expected at the Main Gate because an additional 163 family vehicles would enter and exit the installation. The gate already experiences traffic backups during peak traffic periods, and delays would be expected to increase as more vehicles use this gate. The improvements to the Main, Old Farm, and Opossumtown Gates would reduce off-post queuing spillover by providing increased on-post queuing capacity. These improvements would be expected to improve traffic operations along adjacent arterial highways.

According to the 2003 Fort Detrick transportation study, about 7.5 percent of the total increase in trip counts expected from the proposed major projects on Fort Detrick would be attributed to RCI. The greatest volume-to-capacity (V/C) ratio increase from RCI would be expected to be about 1.9 percent at the 7th Street and U.S. 15 southbound ramps/Biggs Avenue intersection. Therefore, the effects of RCI on traffic levels at these off-post intersections would be expected to be minor.

Long-term beneficial effects would be expected through CDMP design features that would reduce nonresidential vehicle traffic in housing areas, incorporate traffic-calming measures in the vicinity of housing, and create a more pedestrian-friendly environment.

5.1.1.11 Utilities

Potable Water Supply. Long-term minor adverse and beneficial effects would be expected. Areas of new construction would receive new water distribution lines, which would improve water delivery and reduce water exfiltration and loss. However, Fort Detrick's population would increase as a result of the proposed action, as would consumption of potable water. The majority of the Fort Detrick water distribution system is more than 40 years old and will likely require increased maintenance and repair to maintain integrity. The size of the pipes in the distribution system and the lack of pressure are potential weaknesses in the system.

Sanitary Wastewater. Long-term minor adverse and beneficial effects would be expected. The proposed action would increase the on-post population, generating additional wastewater and demand on the sanitary sewer system, which would put additional constraints on the installation's wastewater treatment plant (WWTP). However, the plant has ample operating capacity, indicating there is room for additional demand. Beneficial effects would be expected in areas of new construction because they would receive new wastewater collection lines.

Storm Water. Long-term minor adverse effects would be expected. The addition of 163 housing units would increase the amount of impermeable surface on Fort Detrick. However, storm water management ponds constructed for storm water quality recharge to maintain preconstruction infiltration rates and storm water quantity detention designed to handle the 1-, 2-, 10-, and 100-year storm events to protect channel erosion and overbank flood protection would reduce adverse

effects from increased storm water runoff discharging into Carroll Creek. GMH is planning to construct two storm water management facilities to complement the existing basin just west of the recently completed Military Construction Army (MCA) housing area.

Energy. Long-term beneficial effects would be expected. Construction of new housing units and the revitalization of existing ones would decrease utility demand because of the installation of energy-efficient interior and exterior lighting fixtures and interior appliances. The existing electrical and natural gas distribution systems would be expected to handle the increased demand from an additional 163 housing units.

Communications. Long-term beneficial effects would be expected. New and renovated homes would be wired for cable and Internet access.

Solid Waste. Long-term minor adverse effects would be expected. Debris from the construction, demolition, and renovation of family housing units would increase substantially during the construction period relative to the solid waste typically generated annually by the installation. In addition, the percentage of the installation's solid waste generated by family households during the operation phase of RCI would be expected to increase from 3.0 percent to 5.0 percent. GMH has submitted a request to Fort Detrick to allow disposal of RCI-generated construction and demolition debris in the Fort Detrick landfill. The landfill has ample capacity and should be able to accommodate RCI-generated debris. A potential alternative is the Frederick County landfill, which has a 40-year capacity pending construction of a transfer station. Waste generated from construction of new RCI housing may be accepted at this landfill, however, demolition debris potentially containing hazardous materials may not be accepted. A third alternative is for GMH to employ the services of a waste management contractor, who disposes of the waste at an approved disposal site, which may be outside of Frederick County. Certain solid wastes, such as brick, concrete, and asphalt, would be recycled to the maximum extent feasible.

5.1.1.12 Hazardous Waste

No effects would be expected. All known hazardous materials have been or are scheduled to be abated from the housing units at Fort Detrick on an ongoing basis; therefore, no environmental or health effects resulting from the removal, handling, and disposal of hazardous materials would be expected during demolition or renovation activities. GMH will develop a Hazardous Waste Management Plan that will be provided to the Fort Detrick Environmental Office for approval prior to RCI construction and will be followed throughout construction. Demolition waste that contains asbestos-containing material (ACM) and lead-based paint (LBP) would be handled in accordance with all applicable regulatory requirements. LBP debris is exempt from hazardous waste regulation and can be managed as construction debris with no requirements for hazardous waste characterization. All renovation wastes determined to be hazardous will be managed in accordance with applicable federal and state regulations. The construction contractors would be responsible for collecting and storing potentially hazardous materials used or found on-site in proper containers for a limited amount of time, properly disposing of them in accordance with applicable federal and state laws, and preventing paint and fuel spills.

A refuse contractor will periodically collect and properly dispose of residential hazardous waste. Housing residents will be briefed and given a resident guide on proper hazardous waste disposal procedures during in-processing. If any hazardous waste is found in the housing areas, operations and maintenance personnel will secure it and ensure that a licensed hazardous waste contractor disposes of it properly.

5.1.1.13 Cumulative Effects

The cumulative effects of the proposed action and concurrent activities would be expected to be minor. No current or future off-post actions that would create cumulative effects on Fort Detrick have been identified.

In addition to the RCI program, numerous construction activities are planned on the installation over the next several years. During this period there could be short-term, intermittent minor adverse cumulative effects on air quality, noise, and traffic in the vicinity if these other construction projects were to occur concurrently with the RCI housing construction project. Such activity would lead to a temporary increase in construction vehicles in the vicinity. Future projects identified at this time that would occur in the immediate vicinity of the RCI footprint include the remote truck inspection station and the Biomedical Research Campus. The truck station could potentially pose long-term localized effects on air quality, noise, aesthetics, and safety. However, the effects on the existing housing area would be minor given the distance from the nearest existing or proposed housing unit to the proposed truck station (450 feet). Proper coordination of site planning for the new housing units with design of other proposed construction projects in the vicinity of the RCI footprint would mitigate the potential adverse effects on both on- and off-post residents.

Long-term minor adverse cumulative effects could occur as additional construction projects replace permeable ground surfaces with impervious surfaces, such as parking lots, roads, roofs, and sidewalks. As imperviousness increases, the potential also increases for nonpoint source pollution, such as oil and grease, metals, nutrients, and bacteria, to discharge into waterways. In addition, increases in impervious areas can increase the volume and velocity of storm water entering a waterway, which can erode stream banks and result in the discharge of sediment and riparian instability. GMH would address these issues by designing, constructing, and maintaining (for 50 years) appropriate storm water management facilities for the new housing areas to help counter the additional runoff generated from the cumulative impacts of development.

The new housing areas on-post would be a land use that is compatible with existing off-post neighborhoods. An existing buffer of trees along the installation boundary would be expanded as planned in the CDMP. In addition, no construction of on-post housing units or access roads is planned within about 100 feet of the installation boundary to adhere to a Department of Defense (DoD) policy of restricting future on-post development near installation boundaries for security reasons. This 100-foot buffer, which consists of 50 feet of open space along the installation boundary and then a 50-foot wide vegetated buffer, would also ensure safety, aesthetic quality, and reduced noise levels for off-post residents. No other current or future off-post actions that would create cumulative effects on Fort Detrick have been identified.

Construction of family housing on Fort Detrick would have beneficial effects on the economy by providing construction industry sales and employment and by increasing the availability of off-post housing, when about 163 soldiers and their families move from off-post within the ROI onto Fort Detrick.

Long-term minor adverse cumulative effects on transportation could be expected at the Main Gate because the vehicles of an additional 163 families would be entering and exiting the installation. The Main Gate already experiences traffic backups during peak traffic periods, and delays would be expected to increase as more vehicles use this gate. The proposed reconfiguration of the Main Gate and nearby road improvements, which would provide for additional capacity and would reduce the current conflict with the intersection of Ditto Avenue and Porter Street by moving the traffic entry flow farther to the east, would improve current Main Gate traffic congestion and would be expected to help alleviate the increase in on-post traffic. The proposed development projects at Fort Detrick, including RCI, would compound existing

road infrastructure deficiencies in the vicinity of the installation. However, programmed road improvements would help to alleviate the deficiencies, resulting in a minor adverse effect on off-post traffic levels.

RCI construction activities are expected to generate an estimated 10,000 tons of solid waste. Disposal of unrecyclable solid waste generated by RCI may contribute to cumulative adverse effects to the regional solid waste stream, particularly if the waste were to be disposed of at the Frederick County landfill, which has a limited capacity.

5.1.1.14 Mitigation

Mitigation actions would be expected to reduce, avoid, or compensate for most adverse effects. Refer to Table 4-11 in Section 4.14 for a summary of proposed mitigation measures.

5.1.2 Consequences of the No Action Alternative

Only those resources that would be affected by the no action alternative are discussed below.

5.1.2.1 Aesthetics and Visual Resources

Long-term minor adverse effects would be associated with deterioration of on-post housing over time.

5.1.2.2 Socioeconomics

Housing and Quality of Life. Long-term minor adverse effects would be associated with deterioration of on-post housing over time.

5.2 CONCLUSIONS

Based on the analysis performed in this EA, implementation of the preferred alternative would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an Environmental Impact Statement is not required. Issuance of a Finding of No Significant Impact would be appropriate.

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